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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,948	11/13/2003	Robert H. Wollenberg	T-6280	2902

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EXAMINER

SHOSHO, CALLIE E

ART UNIT PAPER NUMBER

1714

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/713,948

Applicant(s)

WOLLENBERG ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-44 and 47 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 11-13, 16-18, 20 and 48-51 is/are rejected.
- 7) ☒ Claim(s) 6, 10, 14, 15, 19, 45 and 46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All outstanding rejections except for those described below are overcome by applicants' amendment filed 9/29/06.

The new grounds of rejection set forth below are necessitated by applicants' amendment and thus, the following action is final.

Claim Objections

2. The numbering of claims is not in accordance with 37 CFR 1.126 given that there is no claim 7.

Misnumbered claims 8-58 been renumbered 7-51. The following office action refers to renumbered claims 1-57.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 2-3, 5, and 48-51 are rejected under 35 U.S.C. 102(b) as being anticipated by Vaughan (U.S. 4,218,328).

The rejection is adequately set forth in paragraph 4 of the office action mailed 6/23/06 and is incorporated here by reference.

Additionally, attention is drawn to col.4, line 6 of Vaughan that discloses that "the composition is not sulfurized". Further, page 19, lines 1-13 of the present specification discloses that the sulfur content is present in Group II metal overbased sulfurized alkylphenols and in the

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diluent oil used for making the Group II carbonated overbased Mannich condensation products of alkyl phenols. However, it is noted that there is no disclosure in Vaughan that the Mannich condensation product of alkyl phenol is sulfurized. Further, there is no disclosure in Vaughan (col.6, lines 5-23) that the lubricating oil comprises sulfur.

In light of the above, and absent evidence to the contrary, it is the examiner's position that the product of Vaughan does possess less than 0.3% sulfur as now required in each of present claim 2 and present claim 49.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 4, 7-9, 11-13, 16-18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smrcka et al. (U.S. 5,370,805) in view of Wollenberg (U.S. 4,803,002).

The rejection is adequately set forth in paragraph 10 of the office action mailed 6/23/06 and is incorporated here by reference.

Response to Arguments

7. Applicants' arguments regarding Nichols et al. (U.S. 5,173,203) and Farng et al. (U.S. 5,207,939) have been considered but they are moot in view of the discontinuation of the use of these references against the present claims.

8. Applicants' arguments filed 9/29/06 have been fully considered but, with the exception of arguments relating to Nichols et al. and Farnag et al., they are not persuasive.

Specifically, applicants argue that Vaughan is not a relevant reference against the present claims given that Vaughan does not disclose process for producing Group II metal carbonated overbased Mannich condensation product having sulfur content less than 0.3% as measured by ASTM Test No. 4951-92 as now required in present claims 2-3, 5, and 48-51 against which Vaughan is applied. Applicants argue that Vaughan discloses that it "is preferred that the reaction takes place in the presence of chalcogen" such as carbon sulfide, carbon oxysulfide, and sulfur dioxide.

However, it is significant to note that Vaughan discloses that the chalcogen reactant is not an essential reactant and that the preferred chalcogen is carbon dioxide. Thus, it is clear that the use of carbon sulfide, carbon oxysulfide, and sulfur dioxide is not required in Vaughan. Further, attention is drawn to col.4, line 6 of Vaughan that discloses that "the composition is not sulfurized". Additionally, page 19, lines 1-13 of the present specification discloses that the sulfur content is present in Group II metal overbased sulfurized alkylphenols and in the diluent oil used for making the Group II carbonated overbased Mannich condensation products of alkyl phenols.

However, it is noted that there is no disclosure in Vaughan that the Mannich condensation product of alkyl phenol is sulfurized. Further, there is no disclosure in Vaughan (col.6, lines 5-23) that the lubricating oil comprises sulfur.

In light of the above, and absent evidence to the contrary, it is the examiner's position that the product of Vaughan does possess less than 0.3% sulfur as required in each of present claim 2 and present claim 48.

Applicants also argue that there is no motivation to combine Smrcka et al. with Wollenberg given that Wollenberg utilize alkylene carbonate in different way then the present invention. Applicants argue that the product of Wollenberg is different than the presently claimed product, i.e. Group II metal carbonated overbased Mannich condensation product of alkyl phenol. As evidence to support this position, applicants point to col.6, lines 56-59 and col.8, lines 13-14 of Wollenberg that discloses that the alkylene carbonate is used to functionalize the nitrogen on the Mannich base to make it a carbamate and to the structure of the presently claimed product as set forth on page 18, lines 19-24 of the present specification and argue that the structures are different.

It is noted that Smrcka et al. disclose process for making calcium Mannich alkyl phenate which comprises forming a reaction mixture by combining (i) Mannich condensation product of alkyl phenol formed by reacting alkyl phenol, paraformaldehyde, and amine, (ii) lime, i.e. calcium oxide, and (iii) ethylene glycol, i.e. promoter, however, there is no disclosure in Smrcka et al. of alkylene carbonate as presently claimed. This is why Smrcka et al. is used in combination with Wollenberg that discloses reacting alkylene carbonate with Mannich condensation product as presently claimed and disclosed by Smrcka et al.

Applicants argue that Wollenberg disclose product (col.6, lines 56-59 and col.8, line 13-44) different than that of the present invention (page 18, lines 19-24 of the present specification).

However, on the one hand, the cited portion of Wollenberg does not react the alkylene carbonate with the product as disclosed by Smrcka et al. That is, Smrcka et al. disclose product obtained by combining (i) Mannich condensation product of alkyl phenol formed by reacting alkyl phenol, paraformaldehyde, and amine, (ii) lime, i.e. calcium oxide, and (iii) ethylene

glycol, i.e. promoter while the portion of Wollenberg pointed to by applicants disclose reacting alkylene carbonate with nitrogen-containing dispersant. While Wollenberg disclose reacting cyclic carbonate with Mannich base, there is no explicit disclosure of structure that results from such reaction. Further, on the other hand, with respect to the structure as set forth in the present specification, it is noted that page 18, lines 19-24 of the present specification disclose that the structure is "one possible" chemical structure of the Group II metal carbonated overbased product of the carbonation step. Thus, it appears that other structures are possible. It is not clear that product such as that disclosed by Wollenberg is not produced in the present invention.

Given that the combination of Smrcka et al. with Wollenberg disclose process as presently claimed including reacting alkylene carbonate and Mannich condensation product of alkyl phenol as presently claimed, it is not clear why the product of the present invention is different than the product of the process as disclosed by the combination of Smrcka et al. with Wollenberg. Clarification is requested.

Allowable Subject Matter

9. Claims 21-44 and 47 are allowable over the "closest" prior art Vaughan (U.S. 4,218,328), Smrcka et al. (U.S. 5,370,805), and Wollenberg (U.S. 4,803,002) given that there is no disclosure in Vaughan, Smrcka et al., or Wollenberg of process for preparing Group II metal carbonated overbased condensation products of alkylphenols which comprises forming a first reaction mixture by combining an alkyl phenol with an aldehyde and an amine in the presence of an inert hydrocarbon diluent, contacting the first reaction mixture with a second reaction mixture comprising a Group II metal oxide, hydroxide or C₁-C₆ alkoxide and a promoter to form a third

reaction mixture, and contacting the third reaction mixture with an alkylene carbonate for a time and temperature sufficient to form in situ carbon dioxide and alkylene glycol as required in present claim 22.

10. Claims 6, 10, 14-15, 19, and 45-46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 6, 10, 14-15, 19, and 45-46 would be allowable if rewritten in independent form as described above given that there is no disclosure in the “closest” prior art Vaughan (U.S. 4,218,328), Smrcka et al. (U.S. 5,370,805), and Wollenberg (U.S. 4,803,002) of process for preparing a Group II metal carbonated overbased Mannich condensation product of alkyl phenol which comprises forming a reaction mixture by combining a Mannich condensation product of alkyl phenol, a Group II metal oxide, hydroxide, or C₁-C₆ alkoxide, one or more promoters, and an alkylene carbonate for a time and a temperature sufficient to form in situ carbon dioxide and alkylene glycol to form a product comprising a Group II metal carbonated overbased product of an alkyl phenol wherein (i) the alkylene carbonate is added to the reaction mixture over a time period of about 15 minutes to about 120 minutes, (ii) wherein a second promoter comprising water, a C₁-C₅ mono- or di-alcohol, ethylene glycol or a mixture thereof is utilized, or (iii) the CO₂ to Ca ratio of the product is in the range of about 0.01 to about 0.6 as required in present claims 6, 10, and 45 respectively.

Further, there is no disclosure or suggestion in Vaughan, Smrcka et al., or Wollenberg of process of preparing Group II metal carbonated overbased Mannich condensation product of

alkylphenols which comprises forming a reaction mixture by combining a Mannich condensation product of an alkyl phenol, one or more promoters, and a Group II metal oxide, hydroxide, or C₁-C₆ alkoxide and contacting the reaction mixture with an alkylene carbonate for a time and at a temperature sufficient to form in situ carbon dioxide and alkylene glycol to form a product comprising Group II metal carbonated overbased Mannich condensation product of an alkyl phenol wherein (i) the alkylene carbonate is added to the reaction mixture over a time period of about 15 minutes to about 120 minutes, (ii) the alkylene carbonate is added to the reaction mixture over a time period of about 30 minutes to about 90 minutes, (iii) wherein a second promoter comprising water, a C₁-C₅ mono- or di-alcohol, ethylene glycol or a mixture thereof is utilized, or (iv) the CO₂ to Ca ratio of the product is in the range of about 0.01 to about 0.6 as required in present claims 14, 15, 19, and 46 respectively.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

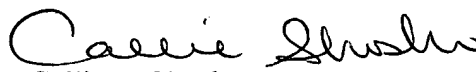
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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
12/2/06